

(19) World Intellectual Property Organization
International Bureau(43) International Publication Date
7 November 2002 (07.11.2002)

PCT

(10) International Publication Number
WO 02/089242 A1

(51) International Patent Classification⁷: **H01M 8/10**, (2/00, 2/02, 2/08, 2/14) (72) Inventors; and
 (75) Inventors/Applicants (for US only): **BARNETT, Scott, A.** [US/US]; 2722 Eastwood, Evanston, IL 60201 (US). **LAI, Tammy** [US/US]; 1500 Chicago Avenue, #508, Evanston, IL 60201 (US). **LIU, Jiang** [US/US]; 2207 Ridge Avenue, Apt. 3B, Evanston, IL 60201 (US).

(21) International Application Number: PCT/US02/11050 (22) International Filing Date: 9 April 2002 (09.04.2002)

(25) Filing Language: English (26) Publication Language: English

(30) Priority Data: 09/833,209 10 April 2001 (10.04.2001) US (74) Agents: **DEDRUIF, Rodney, D.** et al.; Reinhart, Boerner, Van Deuren S.C., P.O. Box 2965, Milwaukee, WI 53201-2965 (US).

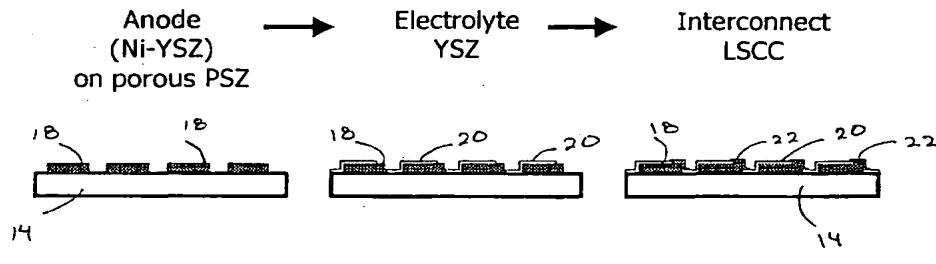
(63) Related by continuation (CON) or continuation-in-part (CIP) to earlier application:
 US 09/833,209 (CIP)
 Filed on 10 April 2001 (10.04.2001) (81) Designated States (national): CA, JP, US.

(71) Applicant (for all designated States except US): **NORTH-WESTERN UNIVERSITY** [US/US]; 633 Clark Street, Evanston, IL 60208 (US). (84) Designated States (regional): European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR).

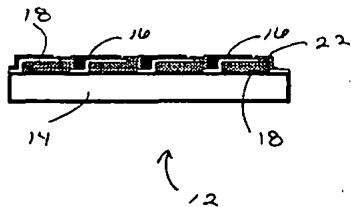
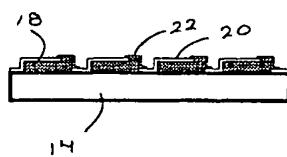
Published:
— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: DIRECT HYDROCARBON FUEL CELLS

High T Sintering
~1400°C

- Cathode (LSCF)
- Final sintering



WO 02/089242 A1

(57) Abstract: A solid oxide fuel cell assembly (SOFC) having an array of SOFC's (12) connected in series by thin-film interconnects (22) are deposited onto a porous, insulating support (14), the layer (12) can be deposited in the order of electrode, electrolyte, interconnect and electrode. The patterning is such that the electrolyte (20) and interconnect (22), both of which are dense layers, are continuous, and form a gas-tight seal over the entire surface.